



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,884	03/31/2004	Jia-Jiun Yeh	TSAI0010	9070
22862	7590	03/17/2006	EXAMINER	
GLENN PATENT GROUP 3475 EDISON WAY, SUITE L MENLO PARK, CA 94025			STULTZ, JESSICA T	
			ART UNIT	PAPER NUMBER
			2873	

DATE MAILED: 03/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/815,884

Applicant(s)

YEH ET AL.

Examiner

Jessica T. Stultz

Art Unit

2873

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>0404</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

For applicant's information, the previous restriction requirement has been withdrawn since all of the claim are drawn to a color-changeable pixel and would not require different searches by the examiner.

### ***Priority***

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Taiwan on August 15, 2003. It is noted, however, that applicant has not filed a certified copy of the Taiwanese application 92122564 as required by 35 U.S.C. 119(b).

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6 and 8-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamada US 2002/0027636, herein referred to as Yamada '636.

Regarding claim 1, Yamada '636 discloses a color-changeable pixel (Abstract and Section 100, wherein the LCD comprises pixels and a color display) comprising: a first electrode (Sections 97, 302-307, wherein the first electrode is "E2" on substrate "S2", Figures 2A-2B and 3), a second electrode (Sections 97, 302-307, wherein the second electrode is "E1" on substrate "S1", Figures 2A-2B and 3), wherein the second electrode is a moveable electrode and is seated in parallel with the first electrode substantially (Sections 97, 136-149, 302-307, wherein the LCD

Art Unit: 2873

deforms, as shown in Figures 2A-2B and wherein the electrodes are arranged in parallel to each other, Figure 3); and a plurality of supports, located between the first electrode and the second electrode (Sections 136-139 and 310, wherein the supports are spacers “3” and resin structures “4” , Figures 2A-B and 3), wherein a restorability of the second electrode is adjusted by a distribution density of the supports (Sections 136-149, wherein the spacer density is adjusted in different areas of the LCD to restore the second electrode and achieve proper spacing between the substrates, Figures 2A-2B and 3).

Regarding claim 2, Yamada ‘636 further discloses that the supports are a plurality of posts (Sections 136-139 and 310-311, wherein the supports “4” are posts, Figures 2A-B and 3); the distribution density of the supports is a quantity of the posts per unit area (Sections 136-149).

Regarding claims 3-4, Yamada ‘636 further discloses that the supports have a distribution density of 400 to 2500 posts per square millimeter (Section 333).

Regarding claim 5, Yamada ‘636 further discloses that the supports are grid supports (Section 310-311, wherein the supports are grid supports, Figures 2A-2B).

Regarding claim 6, Yamada ‘636 further discloses that the material of the supports is a photosensitive material or a non-photosensitive material (Section 310, wherein the spacers “3” are made of thermoplastic resin, which is either photosensitive or non-photosensitive, Figures 2A-2B and 3).

Regarding claim 8, Yamada ‘636 further discloses that the supports are made of a polyester material (Sections 311, wherein the supports “4” are made of polyester resin, Figures 2A-B and 3).

Art Unit: 2873

Regarding claim 9, Yamada '636 further discloses that the supports are made of an acrylic resin (Section 297, wherein the support member "7" is made of acrylic resin, Figures 1 and 2A-B).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada '636, as applied to independent claim 1 as shown above, in view of Yamada US 6,809,788, herein referred to as Yamada '788.

Regarding claim 7, Yamada '636 discloses spacers having a density distribution as shown above, but does not specifically disclose that the spacers are made of a photoresist. Yamada '788 teaches of a liquid crystal display with pixels (Abstract) wherein spacers are made of a photoresist (Column 57, lines 17-25, wherein the spacers are made from a photoresist process) for the purpose of dispersing the spacers over between the substrates to form an empty cell to be filled with liquid crystal material (Column 57, lines 17-25). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made for the spacers of Yamada '636 to be made of a photoresist since Yamada '788 teaches of a liquid crystal display with pixels wherein spacers are made of a photoresist for the purpose of dispersing the spacers between the substrates to form an empty cell to be filled with liquid crystal material.

Art Unit: 2873

*Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Takeda et al US 6,438,282 and Kimura US 6,327,071 are cited as having some similar structure to the claimed invention since disclose a movable electrode opposite a static electrode with supports therebetween.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessica T. Stultz whose telephone number is (571) 272-2339. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Mack can be reached on 571-272-2333. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jessen  
Jessica Stultz  
Patent Examiner  
AU 2873  
March 13, 2006



JORDAN SCHWARTZ  
PRIMARY EXAMINER